

REMARKS

Claim 1-22 were pending in this application.

Claims 1-22 have been rejected.

Claim 10 has been amended as shown above.

Claims 1-22 remain pending in this application.

Reconsideration and full allowance of Claims 1-22 are respectfully requested.

I. OBJECTIONS TO SPECIFICATION

The Office Action objects to the Abstract as being “merely a repeat of the independent claims.” (*Office Action, Page 1, Section 4*).

An Abstract should “sufficiently describe the disclosure to assist readers in deciding whether there is a need for consulting the full patent text for details.” (*M.P.E.P. § 608.01(b)*). Also, the Abstract should be “clear and concise and should not repeat information given in the title.” (*M.P.E.P. § 608.01(b)*).

The Applicants have amended the Abstract to remove terms and phrases such as “there is disclosed,” “comprises,” and “comprising.” The Applicants respectfully submit that the Abstract as amended describes the disclosure. In particular, the Abstract describes the components of a data processor and the function of those components.

Moreover, the Office Action simply asserts that the Abstract “does not describe the disclosure sufficiently nor assist readers.” (*Office Action, Page 2, Section 4*). The Office Action fails to provide any explanation as to why the Abstract in this particular application does not

“describe the disclosure sufficiently.” The Office Action also fails to provide any explanation as to why the Abstract does not “assist readers.” Instead, the Office Action simply makes an assertion without any support, explanation, or rationale. In addition, the Office Action fails to cite any authority supporting the Office Action’s assertion that the Abstract should not contain language similar to the claim language. As a result, the Office Action fails to provide an adequate basis for objecting to the Abstract.

The Office Action also objects to the Summary as being “merely a repeat of claims.” (*Office Action, Page 2, Section 5(a)*). However, the Office Action simply asserts that the Summary “does not ‘set out the exact nature, operation, and purpose [of the invention]’ nor provide ‘material assistance in aiding ready understanding of the patent in future searches.’” (*Office Action, Page 2, Section 5(a)*). The Office Action fails to provide any explanation as to why the Summary in this particular application does not “set out the exact nature, operation, and purpose” of the invention or provide “material assistance in aiding ready understanding of the patent.” Instead, the Office Action makes an assertion without any support, explanation, or rationale. In addition, the Office Action fails to cite any authority supporting the Office Action’s assertion that the Summary should not contain language similar to the claim language. As a result, the Office Action fails to provide an adequate basis for objecting to the Summary.

The Office Action appears to object to the specification based on an assumption that abstracts and summaries containing claim language are generally improper. For example, the Office Action states that the “claims of an invention do not *necessarily* ‘sufficiently describe’ the disclosure.” (*Office Action, Page 12, Section 32*) (italics added). This indicates that the Office

Action is not basing its objections on the actual Abstract and Summary in this particular application. The Office Action fails to explain how the Abstract in this particular disclosure fails to “sufficiently describe” the disclosure. The Office Action also fails to explain how the Summary in this particular disclosure fails to “set out the exact nature, operation, and purpose” of the invention or provide “material assistance in aiding ready understanding of the patent.”

Accordingly, the Applicants respectfully request withdrawal of the objections to the specification.

II. REJECTIONS UNDER 35 U.S.C. § 112

The Office Action rejects Claims 1, 5, 10, 14, and 19 under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. Specifically, the Office Action asserts that it is unclear what the letters “C,” “N,” “S,” and “L” represent (integers, fractions, etc.).

The standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope. (*MPEP* § 2173; *In re Warmerdam*, 33 F.3d 1354, 1361, 31 U.S.P.Q.2d 1754, 1759 (*Fed. Cir.* 1994)). Whether the claim leaves unclear the manner in which a recited feature may be implemented is irrelevant where the claim clearly covers all forms of implementation. (*MPEP* § 2173.02; *In re Warmerdam*, 33 F.3d 1354, 1361, 31 U.S.P.Q.2d 1754, 1759 (*Fed. Cir.* 1994)). Determining whether a claim is indefinite requires an analysis of whether one skilled in the art would understand the bounds of the claim when read in light of the specification. (*MPEP* § 2173.02; *Credle v. Bond*, 25 F.3d 1566, 1576, 30 U.S.P.Q.2d 1911, 1919 (*Fed. Cir.* 1994)).

The claim is not indefinite if one skilled in the art would have no particular difficulty in determining whether the recited feature has been implemented. (*MPEP* § 2173.02; *In re Warmerdam*, 33 F.3d 1354, 1361, 31 U.S.P.Q.2d 1754, 1759 (Fed. Cir. 1994)).

The Office Action fails to even attempt to show that a person skilled in the art would be unable to determine the scope of Claims 1, 5, 10, 14, and 19. For example, Claim 1 recites “C execution clusters,” “N processing stages,” “L lanes,” and “S syllables.” The Office Action fails to show that a person skilled in the art would be unable to interpret “C execution clusters” or “N processing stages” in light of the Applicants’ specification. The Office Action also fails to show that a person skilled in the art would be unable to interpret “L lanes” or “S syllables” in light of the Applicants’ specification.

Because the Office Action has not established that a person skilled in the art would be unable to identify the scope of Claims 1, 5, 10, 14, and 19, the Office Action fails to establish that these claims are indefinite. Accordingly, the Applicants respectfully request withdrawal of the § 112 rejection.

III. REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects Claims 1-3, 8-12, and 17-22 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,167,503 to Jouppi (“*Jouppi*”) in view of U.S. Patent No. 5,051,940 to Vassiliadis et al. (“*Vassiliadis*”). The Office Action rejects Claims 4-7 and 13-16 under 35 U.S.C. § 103(a) as being unpatentable over *Jouppi* and *Vassiliadis* in view of U.S. Patent No. 5,560,028 to Sachs et al. (“*Sachs*”). These rejections are respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. (*MPEP* § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992)). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. (*MPEP* § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984)). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. (*MPEP* § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993)). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. (*In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985)).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. (*In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993)). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to

make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (*MPEP* § 2142).

First, the Office Action fails to show that *Jouppi* discloses, teaches, or suggests an "instruction cache" capable of storing cache lines, each of the cache lines including "C*L syllables" (where C=number of execution clusters and L=number of lanes). The Office Action cites various portions of *Jouppi* as allegedly disclosing these elements of Claims 1, 10, and 19. (*Office Action, Page 4, Section 11(d)(ii)*). However, the cited portions of *Jouppi* simply recite the use of a cache. Nothing in the cited portions of *Jouppi* recite that each cache line includes "C*L syllables" (where C=number of execution clusters and L=number of lanes). As a result, the Office Action fails to establish that *Jouppi* discloses, teaches, or suggests these elements of Claims 1, 10, and 19.

Second, the Office Action fails to show that *Vassiliadis* discloses, teaches, or suggests instruction execution pipelines being "L lanes wide," where each lane is capable of receiving one "syllable" of an "instruction bundle." The Office Action cites one portion of *Vassiliadis* (column 1, lines 7-40) as disclosing these elements of Claims 1, 10, and 19. (*Office Action, Page 5, Section 13(b)-13(c)*). However, the cited portion of *Vassiliadis* simply describes how a single pipeline is divided into multiple stages. (*Col. 1, Lines 14-17*). This is also described in the Applicants' specification at, for example, page 4, lines 1-12 and Figure 4. In these pipelined processors, an instruction is executed in multiple stages, each stage performing a different function needed to execute the instruction. In operation, an instruction is provided to the first stage, the first stage provides output to the second stage, the second stage provides output to the

third stage, and so on.

This portion of *Vassiliadis* has absolutely nothing to do with an “instruction execution pipeline” that is “L lanes wide,” where each lane is capable of receiving one syllable of an instruction bundle. This portion of *Vassiliadis* contains absolutely no mention of multiple lanes. Instead, it simply recites that a pipeline is divided into multiple stages and that “one instruction is fed into the pipeline per cycle.” (*Col. 1, Lines 19-23*). In other words, a single instruction is fed to the first stage of the pipeline per clock cycle. This has absolutely nothing to do with “lanes” of a pipeline where each “lane” receives only one “syllable” of an “instruction bundle.” As a result, the Office Action fails to establish that *Vassiliadis* discloses, teaches, or suggests these elements of Claims 1, 10, and 19.

For these reasons, the Office Action fails to show that the proposed *Jouppi-Vassiliadis* combination discloses, teaches, or suggests all elements of Claims 1, 10, and 19. As a result, the Office Action fails to establish a *prima facie* case of obviousness against Claims 1, 10, and 19 (and their dependent claims). Accordingly, the Applicants respectfully request withdrawal of the § 103 rejection and full allowance of Claims 1-22.

IV. CONCLUSION

As a result of the foregoing, the Applicants assert that all pending claims in this application are in condition for allowance and respectfully request full allowance of all claims.

SUMMARY


If any issues arise, or if the Examiner has any suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com*.

The Commissioner is hereby authorized to charge any additional fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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